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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,210	06/26/2003	Yoshikazu Hanada	Q76020	4368

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EXAMINER
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ADDISU, SARA

ART UNIT	PAPER NUMBER
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3722

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/606,210	HANADA, YOSHIKAZU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sara Addisu	3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-19 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-19 and 21-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/3/06 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then

narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation "...wherein the difference between linear velocities of the core rotating device and the cutting blade rotating device is controlled within a certain range" (claim 1, page 1, last 3 lines), and the claim also recites "a controller which controls the rotational linear velocities of the cutting blade and the core to be substantially equal (Claim 1, page 2, lines 1-2) which is the narrower statement of the

### ***Specification***

3. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 depends on a cancelled claim 2.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 6-9, 13, 15, 18, 19, 21, 22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butterworth (U.S. Patent No. 6,718,853) in view of Stoffels et al. (U.S. Patent No. 4,292,867) and further in view of Kosem (U.S. Patent No. 3,656,377).

Regarding claims 1, 18 and 19, Butterworth teaches a cutting mandrel (52) having a ring-shaped groove/recess (158: formed by machining, casting, forming, molding and the like, Col. 6, lines 12-14) that corresponds to a cutting position of the cutting blade in the axial direction of the cutting mandrel (see figure 3). Mandrel (52) is positioned within the aperture (16) of log (12) such that its outer peripheral surface comes into contact with an inner surface of the log (12) (Col. 6, lines 33-34). (Note: Butterworth's log saw apparatus for coreless products, is fully capable of being used with products with a core). Butterworth also teaches a disc-shaped saw blade (40) positioned opposite to the outer periphery of the log (12) and having cutting edges at its circumference. Furthermore, Butterworth teaches log (12) being rotated by rotating

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device/motor (36) as well as a motor for rotating the cutting blade (40) (Col. 4, lines 64-67 and Col. 5, lines 19-21). As for the phrase used by the applicant in Claims 1 & 18, "... a difference between linear rotation velocities of the core rotating device and the cutting blade rotating device is controlled within a certain range, it is merely intended use and the apparatus taught by Butterworth is capable of functioning such that the rotating components are synchronized and operate within a certain range. Regarding claims 4 and 7, Butterworth teaches saw assembly (10) having a main stage and a standby stage (see diagram below) where the standby stage includes a carriage (with mandrel) mounted on a rail such that mandrel (52) is moved longitudinally toward or away (figures 6-9) from the main stage and is positioned coaxially with log (12) where it is supported by log trough (22) (Col. 5, lines 43-57). Regarding claims 8 and 9, Butterworth teaches clamp assembly (a driving chuck unit) (28) provided on the main stage opposite to the standby stage that holds an end of the log (12) while the mandrel (12) approaches the paper pipe from the standby stage. Butterworth teaches rotation of log, cutting blade and cutting mandrel, therefore for the apparatus to be operational, the rotations have to be controlled to be within a certain range. Regarding claims 21, 22, 24 and 25, Butterworth teaches rolled products such as bathroom tissue, paper towel (well known to use cylindrical paper pipe as a core) and AAPA (page 2, 4<sup>th</sup> paragraph) states that recently, information regarding the recording material, which is wound around the paper pipe core, is often provided on an end surface of the paper pipe (a ring-shoed thick portion). This information is recorded as machine-readable information, such as a

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bar code, so to aid in automatic processing in an image processing apparatus using the roll paper.

However, Butterworth fails to teach the use of a controller such that the cutting blade and paper pipe/core rotate at the same speed.

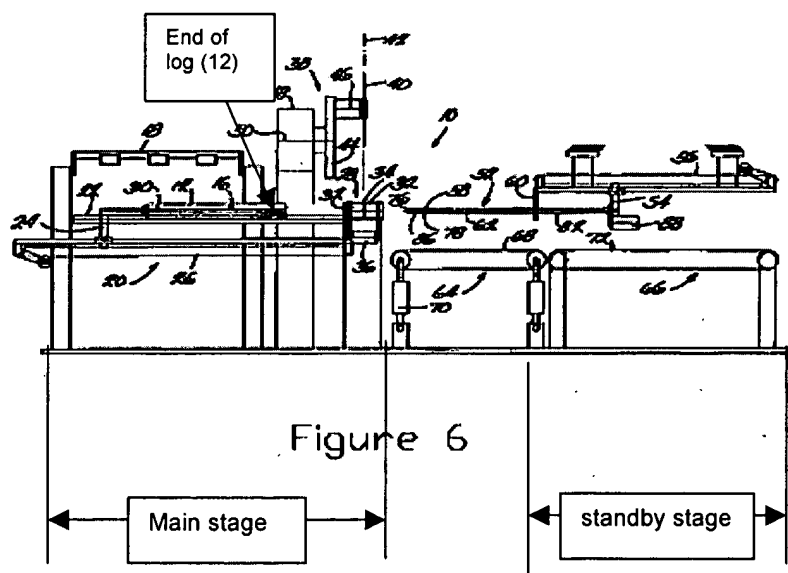
Stoffels et al. teaches circular cutting blade (42) rotating at approximately the same circumferential speed as the outer surface of roll (R) (with the mandrel inserted inside) by a variable speed motor (46) (Col. 4, lines 41-44). It should be noted that cutting blade (42) is fully capable of being used to cut a core. Stoffels et al. also teaches the cutting mandrel and the pipe being coaxial (in agreement with Page 4, lines 17-20 of the Instant Application).

Kosem (U.S. Patent No. 3,656,377) Kosem teaches a numerical control system with a closed control loop for controlling surface speed of a tool where a relative rotary motion is produced between the tool and workpiece by a spindle (Col. 1, lines 5-8 and Col. 6, lines 15-23). Kosem also teaches a timing generator (13) that provides timing signal to control the proper sequencing of operations throughout the numerical control system (Col. 2, lines 54-58) (i.e. speed of workpiece vs. speed of spindle).

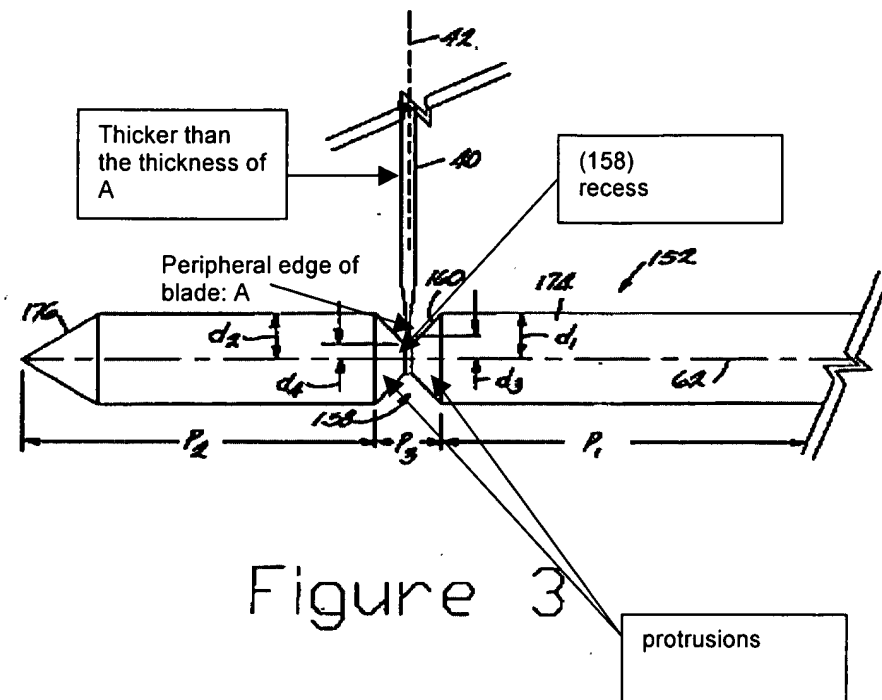
Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Butterworth's invention such that log (12)

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rotates at a velocity that is equal to the rotational velocity of the cutting blade (40), as taught by Stoffels et al., for the purpose of lowering the heat generated by the cutting operation (Col. 6, lines 20-26). It would have been obvious to one of ordinary skill to control rotational speed as well as other movements of the tool using a numerical control system because it is old and well known (as evidenced by Kosem). One known advantage numerical control system is the ability to accurately position and control the cutting feeds and speeds for a machining pattern that can be repeated for each workpiece.







5. Claims 10-12, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butterworth (U.S. Patent No. 6,718,853) in view of Stoffels et al. (U.S. Patent No. 4,292,867) and further in view of Kosem (U.S. Patent No. 3,656,377) and Sartori (U.S. Patent No. 5,383,380).

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The modified device of Butterworth teaches a log saw apparatus and method as set forth in the above rejection.

However, the modified device of Butterworth fails to teach a cutting unit supported and guided on rail section.

Sartori teaches a machine for cutting sections from a cylindrical workpiece (C) having a support mandrel (5) and cutting blade (25) that is rotatably carried on carriage assembly (27) (see figure 1). Carriage assembly (27) is supported on guide rail section (32) for linear movement parallel to the mandrel (5) ('380, Col. 6, lines 61-68).

Regarding claims 12, 14 and 17, Butterworth discloses the claimed invention except for the measurement of the width of the groove on the mandrel. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to vary the width of the groove to accommodate the various blades that could be used having different thickness (i.e. width of blade at the periphery edge), since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Applicant should further note that Specification gives no criticality or unexpected results to the claimed limitation (see Page 12, lines 4-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Butterworth's invention such that a cutting unit is supported and guided on rail section as taught by Sartori, since Butterworth teaches

an alternative embodiment where the blade (saw) can be movable to align the different recesses of the mandrel with the blade ('853, Col. 3, lines 47-51).

6. Claims 3 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butterworth (U.S. Patent No. 6,718,853) in view of Elliott (U.S. Patent No. 5,004,383).

Butterworth teaches a log saw apparatus and method as set forth in the above rejection. As for the phrase used by the applicant in Claim 3, "... a difference between linear rotation velocities of the core rotating device and the cutting blade rotating device is controlled within a certain range, it is merely intended use and the apparatus taught by Butterworth is capable of functioning such that the rotating components are synchronized and operate within a certain range.

However, Butterworth fails to teach deburring the inner periphery of the already cut pieces.

Elliot teaches a deburring device (10) having an inner edge cutting assembly (18) that contacts tube end (12) (see figure 1). Elliot also teaches cutting assembly (18) having conical (tapered) surface (26) (Col. 2, lines 46-52) that rotates to smooth the inner periphery of the pipe. Furthermore, Elliott teaches the deburring device rotating in two opposite directions (First and Second directions) (Col. 3, lines 1-6). (i.e. There are a few combinations or rotations that could take place, both deburring devices could rotate in the same direction clockwise or anticlockwise or rotate in opposite directions.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize a tapered cutting assembly (18) on the end of the pipes cut by of Butterworth's invention as taught by Elliott for the purpose of removing the burrs (i.e. make smooth) from the inner periphery of the pipes ('383, Col. 1, lines 6-8). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the tapered cutting assembly (18) of Elliott's invention simultaneously on both ends of the pipes cut by Butterworth's invention for the purpose of having a time saving, efficient process. Additionally, given the fact that Elliott's invention can rotate in to different directions (First and Second , as set forth in the above rejection), it would have been obvious to one of ordinary skill in the art at the time of the invention was made to rotate the two deburring devices in opposite direction since Elliot teaches the deburring device having the capability to move in two opposite (first and second) directions ('383, Col. 3, lines 1-5).

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Butterworth (U.S. Patent No. 6,718,853) in view of Scott (U.S. Patent No. 1,967,374).

Butterworth teaches a log saw apparatus and method as set forth in the above rejection. Furthermore, Butterworth teaches mandrel (152) including a shaft (174) that is divided into first and second sections (P1 and P2) and a recess (158) formed in the third

section (P3) ('853, figure 3 and Col. 8, lines 23-36). Sections P1 and P2 have protrusion at its end that join to form the recess (158) (see figure above).

However, Butterworth fails to teach the mandrel having plurality of mandrel pieces inserted around a main pipe.

Scott teaches tube feeder and cutter having a mandrel (8) having a main shaft/pipe and plurality of tubular sections (12) slipped onto the shaft ('374, figure 5 and Page 2, lines 25-33). Scott also teaches the length of the tubular sections (12) may vary corresponding to the length of tube section which is desired to cut.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Butterworth's invention such that its first and second sections (P1 and P2) consist of plurality of tubular sections slipped onto the shaft, as taught by Scott for the purpose of having an apparatus that has the versatility to accommodate different length cuts by having quick changing tubular sections that are suited for the particular machining/cut ('374, Page 2, lines 31-33). The modified device of Butterworth would have the protrusions at the end of the tubular sections such that they form a recess upon abutting each other.

### ***Response to Arguments***

1. Applicant's arguments filed 2/3/06 have been fully considered but they are not persuasive.

2. In response to Applicant's argument (page 10, last line through page 11, line 4) that Stoffels does not cut a core, as stated in the previous office action (filed 11/16/05), Stoffels teaches the use of a separate core blade (68) to accommodate a significantly more abrasive core than the roll. If the core is not too abrasive compared to the roll, blade (42) could be used to cut the core as well as the roll. Applicant also argues that Stoffels only teaches speeds of a cutting blade and a roll, Examiner points out that cutting blade (42) is fully capable of being used to cut a core. Additionally, the speeds for the Stoffels blades are not used to modify Butterworth, but rather the teaching of the blade rotating at the same speed as the roll to reduce the heat that is generated ('867, Col. 6, lines 20-23). This advantage between blade (42) and core could be applied to Butterworth to achieve the same result/advantage because the prior art structure is capable of performing the intended use, then it meets the claim.
3. Regarding claim 3, Applicant argues (page 12, third paragraph) that Elliott teaches a single deburring device and not rotating devices on opposite sides of a core and that the motivation to do so is absent from the prior art, and only comes from the present application, as stated in the previous office action (filed 11/16/05), the Examiner asserts that it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does

not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Therefore, Examiner respectfully emphasizes that in a manufacturing/machining environment, reducing downtime and increasing production is key. As a result utilizing two deburring tools on each end of a tube instead of a single tool performing the process one end at a time, would be have been obvious to one having ordinary skill in the art since its operation would be completed at half the time thus increasing efficiency.

4. Regarding claim 3, Applicant argues (page 12, last paragraph), that "there is no motivation for having the deburring devices rotate in opposite direction to one another", Applicant is referred to ('383, Col. 3, lines 1-5) where Elliot specifically teaches the deburring device rotating in two opposite directions (first and second directions), therefore in the event two deburring tools are used on opposite end of a tube, the deburring device is capable of being rotated in two opposite directions. There are a few combinations or rotations that could take place, both deburring devices could rotate in the same direction clockwise or anticlockwise or rotate in opposite directions.
5. Regarding claim 16 of Applicant's argument (page 14, last paragraph), " Examiner asserts that if Butterworth were modified by Scott, the resultant device would include protrusions at the end of tubular sections such that they form a recess. It

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is not clear why examiner believes...". Examnier respectfully points out Scott was used to teach mandrel having plurality of mandrel pieces inserted around a main pipe. The base reference, Butterworth, already teaches mandrel (152) including a shaft (174) that is divided into first and second sections (P1 and P2) and a recess (158) formed in the third section (P3) ('853, figure 3 and Col. 8, lines 23-36).

Sections P1 and P2 have protrusion at its end that join to form the recess (158) (see figure above).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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4/3/06

  
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SUPERVISORY PATENT EXAMINER